

## **Helping Investigators Determine the Causes of Biological Impairments in Aquatic Systems: The Causal Analysis/Diagnosis Decision Information System**

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Increasingly, the regulatory, remedial, and restoration actions taken to manage impaired environments are based on measurement and analysis of the biotic community. When an aquatic community has been identified as impaired, the cause of the impairment must be determined so that appropriate actions can be taken. The USEPA's Stressor Identification (SI) Guidance describes a methodology for identifying the causes of observed impairments in aquatic systems. Stressor identification requires extensive knowledge on a variety of stressors, as well as depth of knowledge on the mechanism, symptoms, and stressor-response relationships for specific stressors.

This poster describes plans for the Causal Analysis/Diagnosis Decision Information System (CADDIS). CADDIS is envisioned as a decision support system that will help investigators in the regions, states, and tribes find, access, organize, and share information useful for causal evaluations in aquatic systems. Tools that are under development for inclusion in CADDIS include stressor-specific tolerance values, a library of conceptual models, and a database of stressor-response information from field studies. A series of the case studies are also under development that will illustrate the Stressor Identification process and application of CADDIS. CADDIS will be developed incrementally and iteratively, and frequent user input and feedback will be essential to the system's success.